



Rose & Westra  
A Division of GZA

GEOTECHNICAL  
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October 3, 2018  
File: 16.0062335.53

Ms. Abigail Hendershott  
Michigan Department of Environmental Quality  
5<sup>th</sup> Floor – Unit 10  
350 Ottawa Avenue NE  
Grand Rapids, MI 49503

Re: Wolverine World Wide, Inc.  
Revised MDOT Parcel Soil Investigation Work Plan

Dear Ms. Hendershott:

Rose & Westra, a Division of GZA GeoEnvironmental, Inc. (R&W/GZA) is presenting this MDOT Parcel Soil Investigation Work Plan (WP) on behalf of Wolverine World Wide, Inc. (Wolverine). This WP pertains to the property located at 1758 House Street, Belmont, Michigan ("Site").

Based on a review of historical files, it appears that the MDOT parcel may have been used for waste disposal in the 1950s and possibly 1960s. Historical aerials show disturbed areas of the parcel (refer to Figure 1A).

This WP outlines the planned soil investigation for this Site being undertaken to look for evidence of historical waste disposal in the formerly disturbed areas of the parcel, including all possible sources of waste. Figure 1A presents a Site Plan which includes the overlay of the historical soil disturbances from the 1950 and 1960/61 aerials on a current aerial photograph.

Based on a review of aerial photographs, it appears that disturbances on the MDOT parcel ceased by 1965. The 1965 aerial photograph shows significant vegetative growth in the formerly disturbed areas.

#### Soil Investigation

R&W/GZA will utilize a triangular grid approach to the soil investigation, as shown on Figure 1B. The grid points are located 60 feet apart. The 60-ft grid interval was selected based on the EPA statistical model and reflects a 95% confidence level of finding a source, if present.

The investigation will be conducted starting in the northwest corner of the grid shown on Figure 1B, working southeasterly. This approach was selected as the most significant disturbances appear in the northwesternmost portion of the Site.

At the MDEQ's request, four additional borings (noted in red on Figure 1B) will be included in a ravine area on the Site.

Borings will be advanced using direct push methods to approximately 20-feet below ground surface (bgs). This depth was selected based on our experience with the identified waste



depths at the former HSDA. Consistent with the approved Work Plan for the HSDA investigation, the soil will be logged as well as screened at 2-foot intervals using a photoionization detector (PID) and XRF. If observable waste is present, the screening interval will be reduced to one foot. If no visual, XRF, or PID screening indicates the likely presence of waste, two samples will be collected from the boring for laboratory analysis. One boring will be collected from a random depth within the top 10 feet and submitted for full laboratory analysis (as listed below). The second sample will be collected from a random interval in the lower 10 ft of the boring and submitted for full laboratory analysis. The depths may be modified based on field conditions and lithology.

If visible waste is identified in a boring or if either PID or XRF screening suggests constituents of concern may be present, soil samples will be collected from within the identified waste interval and from approximately 2 ft below the waste.

These samples will be analyzed for the following analytes in accordance with both the Quality Assurance Project Plan (QAPP) developed by R&W/GZA for the EPA and the PFAS QAPP developed for MDEQ:

- Volatile organic compounds (VOCs);
- Semi-volatile organic compounds (SVOCs);
- Metals Al, Sb, As, Ba, Be, B, Cd, Cr Total, Cr VI, Co, Cu, Fe, Pb, Mg, Hg, Mo, Ni, Se, Ag, Na, Ti, Tl, V, and Zn (TAL metals);
- Acetate;
- Total ammonia, nitrate, and nitrite;
- Chloride;
- Cyanide (total and available);
- Formate;
- Acetate;
- Total phosphorus;
- Sulfate and sulfide.
- Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by DOD QSM v1.1.

Excess soil will be containerized in 55-gallon open-top steel drums and temporarily stored in a designated area. Containerized soil will be disposed of at an appropriate off-site, licensed disposal facility.



The findings of the soil investigation tasks will be summarized in a letter report.

**Schedule**

R&W/GZA anticipates beginning the on-Site investigation approximately the third week of October 2018. A summary report will be submitted within 30 days of receipt of all the analytical reports (EDD format).

Sincerely,

Rose & Westra, a Division of GZA GeoEnvironmental, Inc.

Leslie M. Nelson, P.E.  
Senior Project Manager

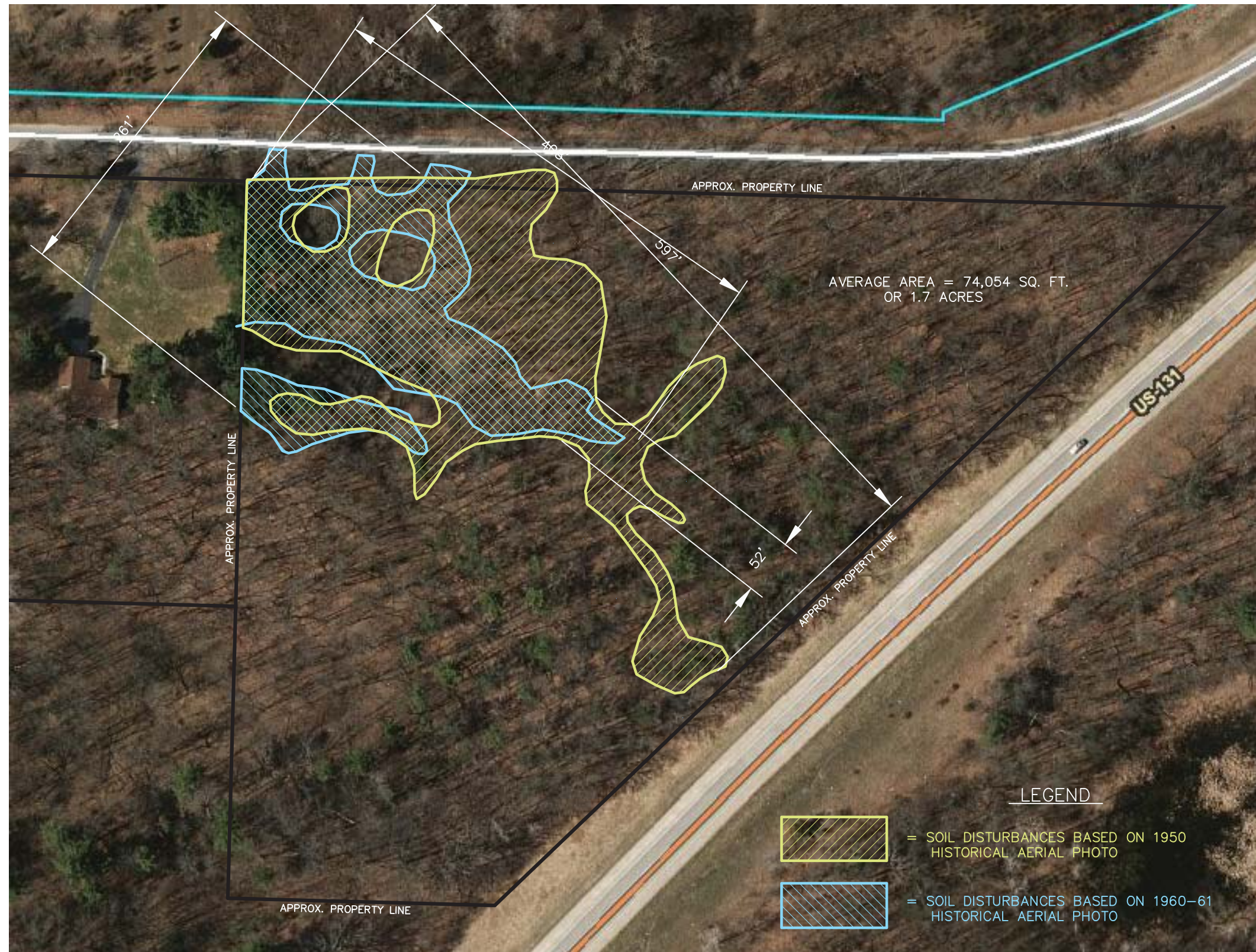
Loretta J. Powers  
Senior Project Manager

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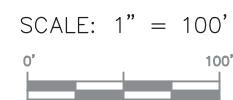
c/enc: Mr. Dave Latchana – Wolverine World Wide, Inc. *via email David.Latchana@wwwinc.com*  
Mr. John V. Byl – Warner Norcross & Judd LLP *via email jbyl@wnj.com*



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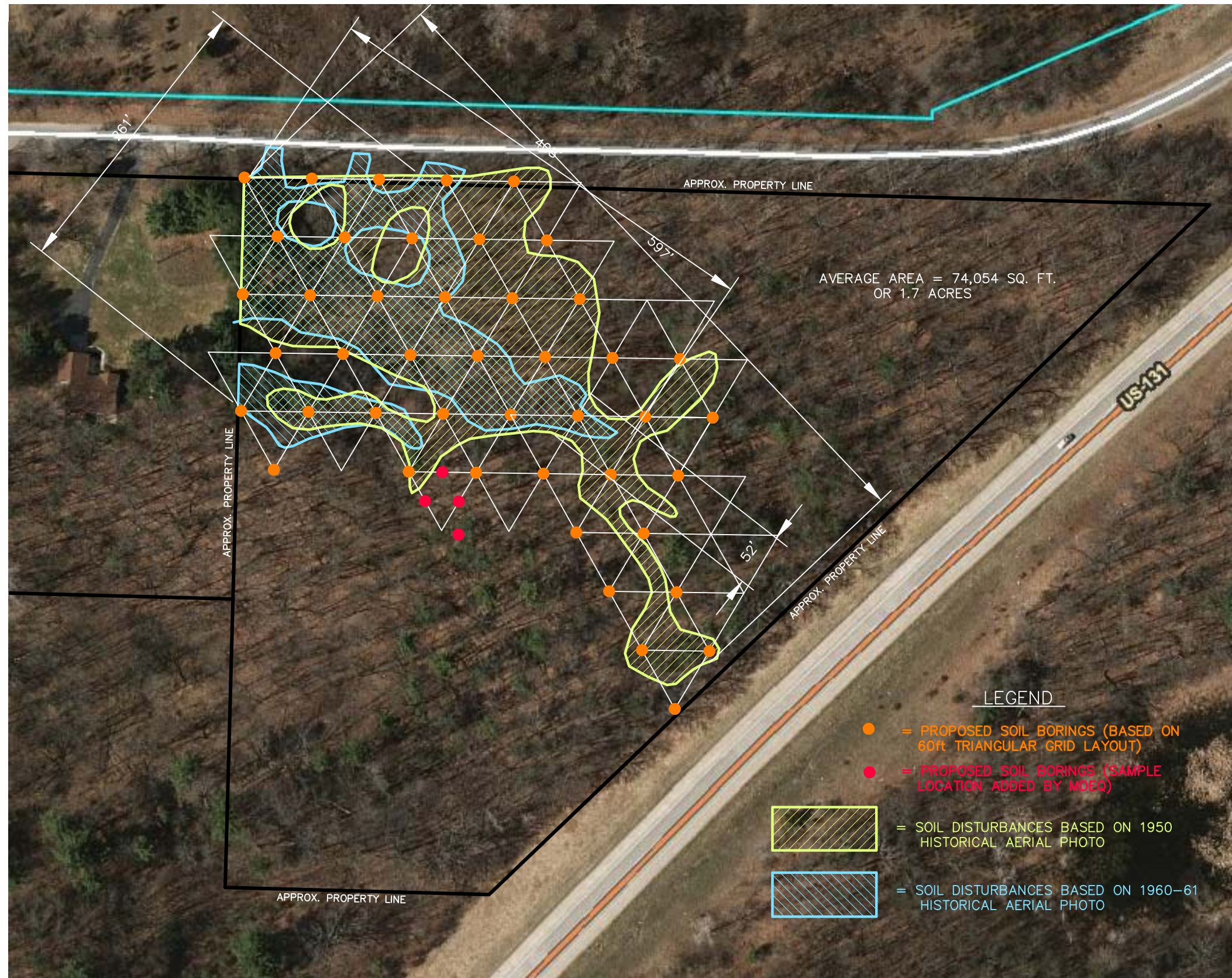


NOTE: TRACED SOIL DISTURBANCES FROM 1965, 1968 & 1973 FALL WITHIN THE LIMITS OF THE 1950 & 1960-61 SOIL DISTURBANCE LIMITS

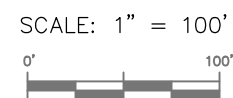


<b>MDOT PROPERTY - HISTORICAL SOIL DISTURBANCES</b>			
 NORTH NORTH ORIENTATION	 <b>ROSE &amp; WESTRA</b> A DIVISION OF GZA Grand Rapids, Michigan GEOTECHNICAL-ENVIRONMENTAL-ECOLOGICAL WATER-CONSTRUCTION MANAGEMENT	<b>CLIENT NAME</b> LOCATION <b>MDOT PROPERTY</b>	PROJECT NO. 16.0062335.53 <b>1A</b> FIGURE NO.
	CREATED BY: KJB	APPROVED BY: LJP	DATE: 8/29/18





NOTE: TRACED SOIL DISTURBANCES FROM 1965, 1968 & 1973 FALL WITHIN THE LIMITS OF THE 1950 & 1960-61 SOIL DISTURBANCE LIMITS



<b>MDOT PROPERTY - HISTORICAL SOIL DISTURBANCES</b>			
 NORTH NORTH ORIENTATION	 <b>ROSE &amp; WESTRA</b> A DIVISION OF GZA Grand Rapids, Michigan GEOTECHNICAL-ENVIRONMENTAL-ECOLOGICAL WATER-CONSTRUCTION MANAGEMENT	<b>W&amp;J/W&amp;W</b> 1758 HOUSE STREET NE, PLAINFIELD TWP, KENT CO, MI <b>MDOT PROPERTY</b>	PROJECT NO. 16.0062335.53 <span style="font-size: 2em;"><b>1B</b></span> FIGURE NO.
CREATED BY: KJB	APPROVED BY: LJP	DATE: 9/26/18	FILE NAME: 62335_53_MDOT_1B